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Cover: RAdm. Alexander S. Goodfellow, USN, Deputy Chief Naval Material (Development) & Chief Naval Development and RAdm. O. D. Waters, USN, Oceanographer of the Navy



The Navy's Role With The New Grumman Submersible—The Ben Franklin

Interview With
RAdm O. D. Waters
Oceanographer of The Navy

Top: The conning tower of the Ben Franklin sporting a bubble-top and bunting awaits launching before diving into the Gulf Stream.

Bottom: Admirals Waters and Goodfellow inspect the instrumentation aboard the Ben Franklin.

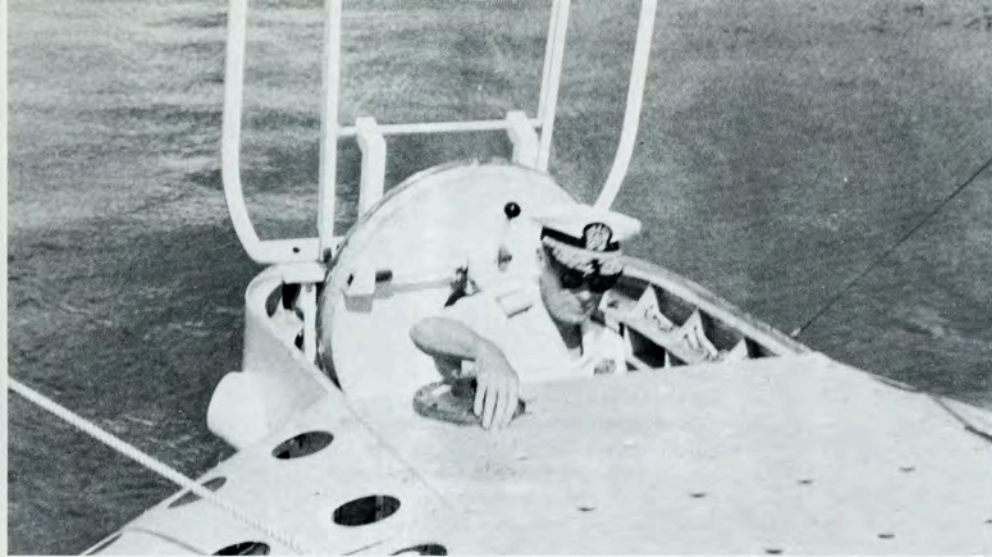


By Gene Mayhall
DATA Managing Editor

On the 21st of August of this year, in Palm Beach, the PX-15 conceived by Jacques Piccard, and built by Giovanola Freres S.A. in Monehty, Valai, Switzerland, under the supervision of Piccard and engineers from Grumman Aircraft Engineering Company, was christened the Ben Franklin. Franklin is well known for his versatility and varied accomplishments and was the first to study the Gulf Stream where the new submersible will operate. Next April, she will be towed offshore with Dr. Piccard and five others aboard. They plan to submerge in the Gulf Stream and drift northward for about 1,500 miles, coming to the surface a month or six weeks later, somewhere east of Cape Cod. The craft will drift at depths ranging from 300 feet to almost 2,000.

Among the many notables at the christening was Rear Admiral O. D. Waters, Jr., Oceanographer of the Navy. He said in his brief speech, "The proposed voyage of the Ben Franklin, adrift in the Gulf Stream, is an adventure in the great tradition of sea faring. The Navy has taken an interest in the project from the very beginning. For example, we sent people to Switzerland to peer over Dr. Piccard's shoulder when he was in the interesting phase of construction. We are happy to provide what cooperation we can for the Gulf Stream experiment such as a mothership to help maintain around-the-clock communications and other services. And we are also participating with technical equipment and oceanographers who will make the trip . . ."

To learn more about Admiral Waters' opinions on the Navy's role in this sub-



Adm. Goodfellow emerges from the hatch of the Ben Franklin following an inspection tour during the christening ceremonies in West Palm Beach, Florida.

mersible and oceanography in general, DATA called on the former hard hat diver who heads this relatively new office for the Navy.

What is the contractual relationship between the contractor and the Navy? I understand you are supplying a communications ship to accompany the Ben Franklin.

Our formal contractual arrangements are still being hammered out, but, yes, we plan to. But it can't be just any ship; it must be equipped with communications and instrumentation so that you can keep directly over it. That's the way these tenders operate with the subsmeribles. They are right over them all the time.

How do they communicate? Radio link?

It's a sound link. By being directly over the vehicle, it is quite easy to maintain good communication.

You say the Navy is also supplying the personnel?

Not all of the personnel. Most of them have been named.

What oceanographic disciplines, or specific talents would you consider important?

We would want an acoustician, a biologist, and a geologist.

What kinds of things would the Navy hope to learn that would be beneficial from an ASW frame of reference, on a trip of this nature?

Well, for example, we may well learn something about the meanderings of the Gulf Stream and what makes it meander, although that's a pretty big job. We may also be able to find out some things about the deep scattering layer, i.e. the layer of

marine life that rises and falls with the sunlight and causes scattering of the sonic beams. The biologist and acoustician could relate these to Navy ASW problems.

Then the Ben Franklin won't necessarily stick right to the bottom? It will rise and fall?

That's right. She's a 2,000 foot boat, and some of the water will be deeper than that. She will take a mid-path as I understand it, most of the time with dips to the bottom to enable the geologist to take looks.

Will the Navy supply instrumentation, take it to Palm Beach and install it right in the same berth where it was launched?

That appears to be the plan right now. I would like to say that after this effort is over, the information we gather will be available to everybody. All data will be unclassified and sent to the National Oceanographic Data Center for anyone who wants it. I'm not sure whether Grumman will be taking data that they will consider proprietary and whether they will sell it to other people.

Is this a common arrangement? The contractor builds the boat more or less after the fact in the hopes that the Navy will come along and want to use it?

This is rather unusual in that the contractor is actually paying the expenses for the operation of the boat. In most other arrangements that I recall, we just contract for a boat for a certain period of time, and pay a certain price for a working day. The boat is operated by the contractors who supply a crew for us and does whatever we ask them to do. It's just like you lease anything else. . . .

Was this Grumman's idea, or yours?

It was proposed by Grumman.

Do you suppose this arrangement is setting any pattern?

Well, we still have a little bit of money for leasing these boats. The Lockheed Deep Quest is under lease right now to the Undersea Warfare Center. Right after the Ben Franklin launching, we went down with the Aluminaut off Vieques. Admiral Goodfellow, Admiral Garrison and I went down to almost 4,000 feet, then sledged up the slope at Vieques island gradually increasing in angle until we got to a sheer cliff. This was preferable to skegging along the bottom.

What about visibility?

At 4,000 feet, there ain't none! But we had very fine lights. The water was clear. Down on the bottom of the deep ocean, it's just like a desert, with a few peculiar looking fish.

What is the money situation these days . . . where is it going, and do you see any hope for improvement?

The whole Federal budget is pretty bad this year, and there was a \$6 billion cut on top of it all. We are being just as frugal in 1970. They may be some money around the corner—but it's well around the corner.

What effect will the Commission report have on you?

Well, we just have to wait and see what they come up with. You hear rumors all around town, and I think this is because there are so many panels working on this thing. It could have quite an effect on the Navy, depending on recommendations and

what is adopted.

How likely are their recommendations to be actually taken on, or approved?

Your guess is as good as mine. The situation is pretty fluid right now; and of course there is a new election coming up. It's pretty damn hard to say what will happen. I think it will depend on how really good a job they do on recommendations. The Commission is headed by a very highly respected man, Dr. Julius Stratton and I would assume that his recommendations will be pretty good.

If you could influence it one way or another, in which direction would you aim?

Our position is, that we have to do with a large amount of all the various disciplines that involve oceanography, for National defense. Our involvement has been increasing steadily over the years. We have been involved in this business for well over a century. We have to do these things and a great deal of what we do is useful to other people. We would hope that the machinery set up will recognize this and that there will be an easy way of giving our useful information to people who need it. This includes the academic community, other Federal agencies and private industry, and the various States. The worst thing that could happen would be for someone to say, "All right Navy, you stay in your corner and do military oceanography and let another civilian agency over here do it for the civilians." That would be a very definite invitation to waste money. We can't afford to do that. This stuff is expensive under any conditions.

The Navy doesn't want to be in the fishing business or the oil business or any of these other things. But the things we are doing that will help them, we think ought to be made available rather than having some one else duplicate our work.

Admiral, could you say a few words about your statement, "Wall Street is not ready for oceanography?"

Well, this business of making money quickly off of the bottom of the ocean has been badly oversold in the popular press, Sunday supplements and so on. They say, you can take a cubic mile of sea water and get so much gold out of it. This sounds great until some engineer comes along and tells you how many hundreds of thousands of dollars it costs just to pump a cubic mile of water, much less get the gold out.

The point is, it's there, but it's not going to be gotten out easily and it's not going to be a commercial venture until it is economical—when the market is right and the price is right. The only people who are making money on a large scale are the fisheries people and the petroleum people, and that is because it is economical to do it this way. There are some isolated cases of mineral exploitation, but when you start talking about deep ocean mining of minerals, it's not just around the corner. You can still get the hard minerals out of the ground more easily than you can from the sea. There is a limited amount of big capital for ventures of this sort, so you see there will be a requirement for Federal money. ■